THERAPEUTICS.

UNDER THE CHARGE OF

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Medication by Latent Arsenic.—DR. ARMAND GAUTIER under this title gives a résumé of his own and other researches on the therapeutic value of the cacodylates. He says that there are a large number of observations now on hand which justify for this form of medicament a settled place in therapy. They have been employed with benefit in a vast variety of diseases; grave anæmia, cachexia of various origins, tuberculosis in its numerous forms, pulmonary, osseous, and visceral, scrofulosis, herpetism, asthma, cutaneous diseases of many types, malaria, disturbances of menstruation, obesity, chorea, paralysis agitans, neurasthenia, myxœdema, scleroderma, exophthalmic goitre, syphilis, and sarcoma—truly a formidable array. In the matter of administration it is best given by the hypodermic method. Patients can bear five-sixths to one and two-thirds grains a day and continue such doses for at least two or three years without symptoms of arsenical poisoning or the occurrence of anatomical lesions in the viscera. The drug may also be administered by mouth, but it seems to be less well borne. This is interpreted as due to processes of oxidation and transformation of the cacodylates into more active forms of arsenic. He concluded his paper by giving the histories of a number of patients suffering from tuberculosis. These were much benefited, and the success of his treatment lead him to conclude that the cacodylates are capable of curing many patients with pulmonary and visceral tuberculosis, even when in seemingly advanced stages. —*Bulletin de l'Académie de Médecine*, 1901, vol. lxv., p. 20.

Action of Arsenic on Healthy Tissues of the Skin.—DR. LESLIE ROBERTS treats this subject from a broad biological point of view. He says that arsenic is universal in its distribution, being like nitrates and nitrites, a soil ingredient, and capable of entering into the tissues of plants and animals. It is closely associated with iron, nickel, and cobalt. In the human body arsenic combines with albumin, and excites the metabolism of cells to greater activity. Albumin and fibrin, according to the observations of Binz and Schultz, are capable of reducing arsenic acid to arsenous acid; blood exerts a powerful reducing action on arsenic acid, but has no action on arsenous acid. Fat exercises no action on the oxidation of this metal. The brain, liver, pancreas, and kidney all exercise a great activity. This arsenical oxidation is held by the author to be in all probability a normal function of the skin, and he draws an analogy between the nutritive value of this metal for the skin and the thyroid for other types of metabolism. These metabolic activities are brought about by the formation in the tissues of nascent oxygen. He further draws other analogies, saying that perhaps Gautier's inference, that there exist in the body certain functional elements, of which very few have as yet been discovered, but which are essential to the performance of certain functions, is correct. Thus manganese is said to be essential to the oxidizing ferment; iodine to the thyroid; phosphorus to the nucleinic bodies; fluorine to the bone cells. Of the functional elements, some appear to play the rôle of "principal actors," while others may be termed substitutional elements or "understudies." Thus arsenic may, to some extent, take the place of phosphorus in relation to the nucleins; selenium is thought to be able to act as sulphur; copper, zinc, and manganese may replace iron; while phosphorus, arsenic, vanadium, or bismuth may play the rôle of nitrogen. Beyond these as yet theoretical assumptions, it is certain that arsenic is not merely an irritant poison, but its action is determined by the tissues themselves; that its effects are essentially of a nutritive order brought about by the agency of active oxygen; that these effects are of benefit to the organism when the oxidation is slow and detrimental when rapid; that the more highly organized the cell the more unstable its protoplasm, and the more rapid its metabolic processes, the more readily does it feel and manifest the action of arsenic.—*British Medical Journal*, 1901, No. 2126, p. 861.

Action of Arsenic on the Skin.—DR. H. G. BROOKE concludes from a series of microscopical studies that the main action of arsenic is obviously a stimulation of the growth and functions of the epithelium. The interpapillary pegs are very irregularly enlarged and prolonged downward, the prickle cell layer increased, the granular layer always and often very considerably thickened, the stratum lucidum is abnormally well marked, and the horny layer altered in character and unusually pronounced. As the poisonous action of the arsenic continues, either by the further absorption or the process of elimination of the arsenic through the skin, the hyperidrosis ceases and the horny layer becomes dry and lamellar, and scales off rapidly. Usually this is preliminary to restitution of tissue, but in pronounced cases the stimulation may have been so great that the cells are unable to recover, and atrophy of a more or less complete character sets in. The papillæ flatten, the cells lose their position and special characters until the whole epithelial layer is represented by three or four rows of degenerate cells, with a last trace of a stratum lucidum and a covering of very thin flat paper-like lamellæ. The sebaceous glands are not affected except by general atrophy, their fatty contents apparently rendering them immune to the action of the drug.—*British Medical Journal*, 1901, No. 2126, p. 860.

Quinine as a Prophylactic in Malaria.—SIR WILLIAM MACGREGOR contributes an affirmative note to the discussion as to the value of quinine as a prophylactic. He thinks it highly probable that at least as much can be done by the use of quinine as by the employment of mosquito netting. The greater number of government officers take quinine regularly; but, he adds, so long as the taking of quinine is not compulsory there will always